DOCUMENT RESUME

ED 383 319 IR 017 174

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TITLE Neighbors On Line: Enhancing Global Perspectives and Cultural Sharing with the Internet.
PUB DATE 95
NOTE 10p.; In: Proceedings of the 1995 Annual National Convention of the Association for Educational Communications and Technology (AECT), (17th, Anaheim, CA, 1995); see IR 017 139.
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Networks; *Computer Uses in Education; Electronic Mail; Elementary Secondary Education; Foreign Countries; Information Networks; *Intercultural Communication; *International Communication
IDENTIFIERS *Internet; Kansas; South Korea

ABSTRACT

The purpose of this study was to investigate the status of computer use within Korean and United States schools, and then use the Internet to establish cross cultural communication between schools. It was hoped that through international communication using the Internet, students at the elementary, junior high, and high school levels would gain deeper knowledge about other cultures and develop higher order thinking skills as they engaged in collaborative projects. Following a general history of the use of computers in United States schools, the paper describes the "Asian Link: Telecommunications for the 21st Century" project, and some efforts within the state of Kansas to get schools online. "Asian Link" was designed to investigate how to apply telecommunications technology in K-12 education. Participating nations included Korea, United States, Australia, Japan, and China. Information is provided on what the schools needed to prepare, instructional activities, how teachers and students worked through the network, the difficulties which participating schools experienced, and social implications. Projects in Kansas are described: Information Network of Kansas (INK), Link 19, America On-line and direct connection to the Internet. An appendix lists Korean and United States partner schools. Contains five references. (Author/MAS)

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Title:

Neighbors On Line: Enhancing Global Perspectives and Cultural Sharing with the Internet

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The purpose of this study was to investigate the status of computer usage within Korean and United States schools, and then use the internet to establish cross cultural communications between schools. We hope that through this international communication using the internet, students at the elementary, junior high, and high school levels will gain deeper knowledge about other cultures and develop higher order thinking skills as they engage in collaborative projects. The Internet allows people to use computers to communicate by using the existing telephone lines; messages can be sent and received between various parts of the world, wherever the telephone lines travel and Internet access has been obtained.

After numerous planning meetings and site visits to schools, this project is in the preliminary stages of Internet communications between students. Eventually, we hope students can travel to visit their counterpart schools and thus have first hand experience within another culture. This cross cultural use of the internet has great potential to enhance the richness of student knowledge and thinking by allowing multiple ideas to flow from different perspectives, while developing multicultural sharing and acceptance from a young age, thus circumventing some of the preconceived prejudices found in the world today. Such understanding and tolerance can most certainly influence future political, business, and educational decisions, and policies. This goal goes far beyond the current attempts at understanding world news and cultural events from an isolated standpoint.

The sharing that can take place between students in the different countries has the potential to develop collaboration at an entirely different level than has been possible in the past. Although there potentially have been other projects in the past that might have encouraged such inter-cultural communication, they have been largely limited to print or video based efforts, and have had delays in both the type and speed at which communication could take place. The internet allows the most immediately interactive method of collaboration at a distance, that transcends past efforts by allowing students to take on joint efforts on projects. For example, students might engage in interactive school policy discussions, or perhaps design together a project that in the end reflects characteristics of different styles of the different countries involved. Such a project would reflect a truly multicultural result for no matter what the topic, students could bring their own perspective to the task and thus the input would represent multicultural thinking. The potential impact of different viewpoints, artistic expression, value systems, and so on offered through such a project could result in thinking that goes beyond that possible within a more limited setting. Further, you can imagine the difference between studying about Eastern or Western cultures by using traditional methods versus having current cultural information provided by one's peer age group that lives within the other culture. For example, the study of music would no longer be limited to the music classroom or traditional musical forms associated with any particular culture, but could include the favorite popular music and artists as recognized by each country's current youth; a new car design could contain some of the features currently found on cars within each country; discussions on social policy could bring explanations of the background reasons for particular customs or viewpoints; and anthropological information such as viewpoints on aging and family units could bring a deeper understanding of other cultures.

Since the 1970s, schools in the United States have struggled to find meaningful ways to implement computers in order to respond to a societal need to develop computer literacy along with skill in using the newly available information technologies. These technologies are changing rapidly and schools are struggling to keep abreast of those changes. Thus many schools are interested in expanding their activities to include more challenging and educationally meaningful experiences for students that will translate directly into building higher levels of thinking and better skills at using the newly available and powerful information technologies. Telecommunications has been an important method of offering distance education for adult and high school audiences over the past several years, but very little has been done using the internet for these audiences and very little has been attempted to create educational opportunities for elementary and middle school students using telecommunications. One goal of this project was to establish an international communications link between school students at the elementary, junior high, and high school levels, thus empowering students to go beyond the traditional curriculum and gain education in a different way.

The important issues surrounding educational computing have changed over the past decade as the technology and access to it have improved. When computers were first placed in U.S. schools, the questions focused on how to get more hardware and software. Then, as more and better equipment became

available, the focus shifted attention to the best way to implement computers for educationally rich experiences. Databases have made huge caches of information available to students and the teaching process itself has shifted to focus on building higher order thinking and research skills, changing the very nature of the teacher's job.

As the schools struggle to find meaningful uses for computers, the technology often drives the curriculum effort (Knupfer, 1993). It is apparent that the curriculum needs should lead the technological efforts, but the technology offers unique opportunities that go beyond the original curriculum plans. Many countries wrestle with these issues.

In the mid 1980s Korea began to implement computers to promote information technology skills in schools. In Korea, the effort was led by social forces, much the same as in the U.S. But what stage is Korea at now? How far have U.S. schools progressed with information technologies? Which country is leading the telecommunications efforts? Both countries have produced leaders in researching and implementing educational computing, and scores of Korean teachers have pursued graduate studies in U.S. universities to gain knowledge about educational communications and technology. How do the countries compare in their current activities and efforts within the schools? What similarities and differences help or hinder their efforts? What can we learn from each other, now that we can communicate via the internet communications system? What new experiences can we offer our students for learning about another country and culture, and applying higher order thinking to meaningful inter-cultural exchange?

This paper attempts to answer some of those questions as it reports about some current efforts of schools in Korea and the United States. Specifically, the remainder of this paper will describe the Asian Link: Telecommunications for the 21st Century project and some efforts within the state of Kansas to get schools online.

Asian Link : Telecommunications for the 21st Century

The *Asian Link: Telecommunications for the 21st Century* project was initiated by the Australian Asian Education Foundation which was founded to introduce Australia to Asian countries and Asian countries to Australia through education. They wanted to conduct this mission through interesting and exciting methods, and internet telecommunications received the attention due to its convenience and economic outlook. While the use of telecommunications, particularly international telecommunications such as that offered by the internet, was actively applied in tertiary education, primary and secondary education also can greatly benefit from it. Such experience will be the basis for creating a model which at the beginning stage will facilitate closer ties between Korean schools and other schools in Asia, Australia, and the United States of America.

The purpose of this international project is to investigate how to apply telecommunication technology in K-12 education. Instructional activities through the telecommunication technology can encourage cooperative learning environment because activities in this project are based on the students' choice and consensus among partners from the school of foreign countries. It is all based on such democratic processes.

Participating Countries and Supporting Organizations

- Korea: Korea Educational Development Institute
- USA: Copen Family Fund, Korea Society
  I#EARN (International Education and Research Network)
- Australia: Asia Education Foundation (AEF), Australia Korea Foundation
  I#EARN Australia
- Japan: Association for Promotion of International Co-operation in Tokyo
- China: Chinese Institute of Educational Research in Beading

What Schools Need to Prepare

- Staff and student ideas
- Staff that includes a group of teachers, especially an English teacher and computer teacher or a teacher proficient in the use of computers,
- Other teachers of any subject with passion on this approach
- A computer and telecommunication software
- A modem and phone line
- Teleconferencing facilities (Lumba video phone - slow scan black & white phone, not essential)
- Subscription to I#EARN (International Education And Resource Network)

The computer and phone lines are encouraged to be situated in classrooms. That is essential if the computer is to be viewed as an integral part of what is done on a daily in classes. I#EARN is designed to create an educational framework specifically for classroom teachers to utilize the vast resources available through these global networks. I#EARN was created by the Copen Family Fund in 1990, working closely with affiliate telecommunications networks of the Association for Progressive Communications (APC) system and a number of educational organizations. Each participating school has two internet IDs assigned by KEDI and one APC user identification (ID) supported by the Copen Family Fund. (The list of IDs for each school is listed in the appendix.)

Instructional Activities: Research Content

What is important is the individual subject area, not the computer or the technology. Telecommunication should be accepted as an educational media to empower students and teachers, thus hopefully elevate the quality of education. Given the enormity of global telecommunications networks, it would be a daunting task (but not impossible) for an individual teacher to develop the familiarity and contacts to create meaningful and relevant networks to both their subject areas and student interests.

Instructional activities are not fixed; they are up to the participants. To promote cultural awareness, to integrate telecommunications into foreign language study at an early age, and to support inter-curricular activities, cooperative project based programs are among encouraged.

How Students And Teachers Work Through APC Net

The participating schools are paired and encouraged to correspond to those one-to-one partnership schools. However, they are also open to communicate with other I#EARN schools over the world (approximately more than 400 schools from 23 countries).
Participating students and teachers use conference rooms on APC network such as AEF.ideas, AEF.teachers, and AEF.students in order to exchange project ideas. Ideas are tossed to those conferences and anyone who are interested in that idea can join the project.

This communication is to establish a long term relationship and hopefully result in exchanges and other forms of collaborative learning. As a result of this project, Ahyun Middle School (one of the participating schools in Korea) sent 31 students and 4 teachers to their partner school, Castle Hill High School, in Sydney, Australia. For the return visit, students and teachers of Castle Hill High School will visit Ahyun Middle School next year and they already started their preparation such as to offer classes for Korean language which is one of their four major foreign languages regulated by the Australian government curriculum.

The Difficulties Of Participating Schools Experience

There are numerous obstacles to implementing the internet technology in education in Korea including the following:

1. Shortage of a phone line for networking

Generally public schools have two three phone lines for the whole school. While the phone line is so scare resource, it is difficult to keep a line for long for networking. In most of the schools, the hardware facilities for networking such as a computer and modem for networking is not a problem but installation of a new designated phone line for the networking creates problems like fare distribution of school resources and maintenance fee monthly.

2. Language barrier

English is the second language and in fact to Koreans learning English is almost the most difficult language to learn. Those students in middle school who just started to learn English can experience difficulties in expressing themselves in the foreign language. In Korea, English is taught from the middle school, thus elementary students do not even start to learn English. Teachers have the same language problem. Although English teachers are encouraged in join this project, their support is limited.

3. Speed of networking

In local networking, speed is not such a problem. But when it is the international networking, the speed becomes a problem. Particularly for multimedia data networking (WWW networking), it is so slow that schools can not afford the phone bills. It is more of an infrastructural problem in Korea.

4. Limited ID for Individual students

For this project, KEDI provided two internet IDs, one for a teacher and another for students. I#EARN distributed one ID for each institute. Thus, students write and send it to the teachers so that the teachers can handle the data. It creates the situation where students do not take care of their letters directly. It looses their feeling of control.

5. Technical training for teachers

For teachers, networking is very foreign. It requires some technical skills. More time and training are required until they feel comfortable to use the internet.

6. Integration into the curriculum

Internet networking is fun to use but difficult to interweave the fun into the existing curriculum as a meaningful instructional activity.

7. Discontinuity of project among teachers

Due to the short turn around period for teachers (in Korea, every three or four years, all the teachers at the public schools whose status are public servants are obligated to change schools to prevent the stagnation of being in one place too long and experience and share their specialties in different settings), the project can lose the continuity among participating partner schools. Once the teacher in charge or the principal are appointed to another school, it is difficult to expect to keep the relationship between the partner schools.

While internet implementation during the instruction is initially practiced and many problems are first noticed, its educational value is apparent. It motivates students and teachers very much and brings the real world into the class, introducing international culture and society in a natural manner. Both students and teachers truly feel they are living in a global village.

Sample I#EARN Projects

I#EARN has been involved with many projects that reflect issues of global interest and social concern. Certainly as the internet communication expands, the list of I#EARN projects will expand as well. The following projects are a partial listing of those completed since August 1992.

- The Contemporary, a news magazine
- A Vision, a literary anthology
- Water Pumps for Nicaragua
- Somalia Relief
- The Holocaust Project
- The Heroes Project, a hero identification project for children
- Water Monitoring Project
- First 100 Days of the Clinton Administration
- Holiday's Project
- A Current Events Seminar

Social Implications

Many positive social outcomes are likely to emerge from this project and we hope to see students realize the fullest potential of data retrieval and shared communication capabilities of the internet. However, wisdom dictates that responsible educators anticipate and try to avoid potential social problems that might emerge as hidden issues.

Some of the social issues inherent within this project could emerge as the project develops and so we will mention a few of the more obvious ones here. First the numbers of students and teachers who can participate are limited. Although the specific numbers vary from school to school, the number of students who can be involved at each school ranges at about 20-30 students, who are selected by the teachers, thus the majority of students do not have the opportunity to participate in this project. Students are limited in numbers because basically, this project is not part of the regular curriculum.

Funding remains a problem at the individual student level and at the school level. At this time, individual students must accept the responsibility of payment for any travel and so, students are limited by their family's financial status.

Schools have limited money for the telephone lines and so the lines are used for other purposes in addition to the internet project. Because teachers have difficulty accessing the telephone lines during the school day when they are needed for voice communication, the teachers find themselves extending their work day into the evening hours to work when no one else needs the telephone line. Although some schools could obtain less expensive access to the internet through local universities, training then becomes an issue. Currently KEDI provides training on a common access system, but it schools choose to access the internet through a local university, then system training would need to be offered by that university.

Internet access offers communication opportunities that have mixed results. There is the potential of emerging personal relationships which could have positive or negative effects. Also, there are concerns about access to pornographic material for students who use the internet. Questions have emerged about whether the balance of males and females involved with the project will be representative of the student population at each school. Ethical considerations must be addressed concerning the responsibility of the teacher, the safety of students, and the potential of virtual relationships to develop productively. In general, teachers need to make some judgments about the wisdom and guidance necessary for unrestricted access to the internet resources.

KANSAS EFFORTS

Internet communication in Kansas schools has been led by two driving forces, the individual teachers and funding. Like the computing efforts of the past decade (Knupfer, 1993), internet telecommunications is most likely to occur where interested teachers make a grassroots effort to gain access to the resource.

Information Network of Kansas (INK)

The Information Network of Kansas (INK) was activated in 1992 in an effort to provide on-line services to people throughout Kansas. Within the INK network there is information concerning legislative, banking, legal, insurance, business and commerce, library, State agency services, local government, electronic mail, children's services, and customer utilities. Initially, access to INK was available to schools for an annual subscription fee of $50.00 plus a connect time charge of $.40 per minute after the first minute. Now the annual subscription fee has jumped to $180 per year plus a line charge of $7.20 per hour of use, plus the long distance connect time charge. If a school has access to a computer, modem, telecommunications software, and a telephone line, then it can access INK.

Unfortunately, the funding could not keep pace with the huge on-line charges that began accumulating as more and more schools began to use the services at ever-increasing levels. For many rural districts who were not within access to an internet hub by through a local telephone call, the INK became a primary resource. And, rather than que files and set them up to run in batch mode to minimize connection time, schools found their usage did not conform to that option. Instead, students and teachers were performing on-line, interactive database searches that required lengthy connections. Now schools are finding the accumulating cost to be a burden and school usage of INK is in jeopardy.

Link 19

Link 19 is another on-line service that is free to Instructional Television (ITV) members, beginning Fall 1994. Link 19 is a powerful computer-based information and communications network that provides access to educational resources, including the internet, bulletin boards, newsgroups, discussion centers, and Sharenet. Those school districts with full subscriptions to ITV service qualify for three free connections to Link 19. Less than full, regular subscription to ITV would make a district eligible for one connection at most within the district. Extra accounts can be purchased at an additional charge. At first, Link 19 offered one hour free access per day for each school, then that was decreased to one hour per day for three sites per school district, and currently the policy seems to be fluctuating down and up.

American On-line

Many Kansas schools are finding that American On-Line (AOL) is one of the better commercial services available for those who have a local number to call. Unfortunately the many rural schools in Kansas do not have access to an AOL hub by a local telephone number. The cost of AOL itself is $9.95 per month, plus any line charge for long distance calls, plus $2.95 per hour. AOL provides full internet service plus a host of special services.

Direct Connection to Internet

Schools that wish to have a direct connection to the internet will pay a minimum of $5,800 per year for the service, plus any long distance fee to access the nearest hub. The direct connection could be beneficial to some schools, while others would find the additional fees overwhelming.

DISCUSSION

Financial difficulties that result in limited access to software and service providers have been the most difficult problem for Kansas schools in the telecommunications effort. Finding the right provider with appropriate and affordable services is difficult and so schools are struggling to find funding for the services. It is possible that centralized control over pricing and access that is negotiated for all Kansas schools could help, but currently local control means a variety of situations and inequitable opportunities, based upon the local service provider's policies, the schools ability to afford the service, and the schools distance from a local telephone call to the internet.

Although all schools could potentially have access to the internet and communicate globally, the reality is that the rural districts cannot afford such activity on a regular basis due to the long distance telephone charges. Schools that are within local calling distance from a main AOL hub or a university internet connection have better access at a far reduced price. Many rural teachers are investigating the potential of getting sponsorship support from local businesses, but that is not an easy commitment to secure without definite cost projections on a long-term basis. So many students will continue to wait for additional funding in order to join the internet community. One key difference between Korean schools and Kansas schools is the provision of the internet ID by a central source in Korea.

Of course, the continuing problems that have plagued teachers during the course of the technological revolution continue as computing moves into the telecommunications and internet arena. Two pressing problems reported previously, shortage of training and time (Knupfer, 1989-90) continue as concerns. The internet presents an area of access to a wide variety of resources and teachers will need some training and preparation time to adequately attend to this resource in a practical and meaningful way. Two excellent sources of information for teachers about how to implement internet telecommunications within the classroom are *TeleSensations: The Educators' Handbook to Instructional Computing*, by Andres, Jacks, and Rogers (1991 and *Integrating Telecommunications into Education*, by Roberts, Blakeslee, Brown, and Lenk (1990).

If Kansas schools are to communicate with Korean schools, a third problem that they might encounter is language. Although many students study second languages in school, Korean is a language that is rarely offered within a public school setting. Foreign language classes have suffered as the lack of qualified teachers and funding have combined to create a shortage of on-site language courses. Schools in Kansas are limiting their choices of foreign language to those in greatest demand, usually Spanish, and are offering those classes increasingly via distance education. This situation makes it highly unlikely that additional foreign language courses will be offered unless something happens to change the perceived need for foreign language with respect to the rest of the curriculum. One could speculate that schools should

place more emphasis on foreign language as the improved communications promotes world wide communication. However, as we can see from the Australian and Korean experience, many countries offer English as a second language; this of course, makes English the easiest route for schools in the United States and does not apply pressure to reconsider decisions along that line.

In Kansas, there are many teachers and students who are eager to join in the telecommunications with Korean schools. However, they struggle with the ability to do so. If Kansas students are to keep abreast of the changes in education, then they will need to be allowed to participate in activities beyond the scope of the existing curriculum within the existing school structure. Liberating the students to access the internet will provide a world of opportunity for them that will only begin with the international school communication.

The potential of the internet communications for shared projects among these students in different countries is enormous. Naturally, schools face social and cultural implications that result because of access to the internet and its potential to change the educational system, whether communication goes beyond the boundaries of a country or simply beyond the boundaries of a school. The internet truly has the ability to empower teachers and students to strike out beyond the traditional curriculum to change the very nature of their topics of study, the methods by which they study them, and the result of the educational process.

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APPENDIX

KOREAN SCHOOLS	KEDI ID	IGC ID	PARTNER SCHOOL	IGC ID
1. Pohang East Elem. Mr. Jaekon Park	poet poes	pohangeast	Sunnyside Elementary	sunnyside
2. Pohang West Elem. Mr. Pankun Kim	powt pows	pohangwest	Kimball Elementary	kimball
3. Ahyun Middle Mr. Sujong Lee	ahyunt ahyuns	ahyun	Castle Hill High (Au) Covington Jr High	castlehs covington
4. Yangjeung High Mr. Yongkwon Cho	yangt yangs	yangjeung	Capital High McKinnon Secon Col(Au)	capitalhs mckinnon
5. Kunkuk High Mr. Sangul Lee	kunt kuns	kungkook	South Bronx High	sbhs
6. Suhgui High Mr. Kitae Pyun	suhguit suhguis	suhguinong	Kaimuki High	
7. Junju High Mr. Unkyun Paek	junjut junjus	junju	Sammamish High	sammamishhs
8. KEDI	ohlee	kedi	Dr. Okhwa Lee	

*All IGC ID requires @igc.apc.org to be the full name except the school of Australia.
Aussi schools have @peg.pegasus.oz.au

*All KEDI ID requires @ns.kedi.re.kr Eafter the account for the full name.